

Notice of Allowability

Application No.

09/810,576

Examiner

Curtis B. Odom

Applicant(s)

HALL ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt filed on 11/22/2004.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☒ The drawings filed on 5/15/2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gregory D. Caldwell on December 8, 2004.

The application has been amended as follows:

Claim 4 (currently amended). The system according to claim 1, further comprising at least one driver device operably connected to the encoder and at least one receiver device operably connected to a decoder, the at least one driver device transferring the encoded waveform across a transmission medium to the at least one receiver.

Claim 5 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform are '000', the encoded waveform comprising two sections where a first section is at a zero level and a second section is at a zero level.

Claim 6 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '001', the encoded waveform comprising two sections where a first section is at a zero level and a second section is a negative pulse.

Claim 7 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '010', the encoded waveform comprising two sections where a first section is a negative pulse and a second section is at a zero level.

Claim 8 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '011', the encoded waveform comprising two sections where a first section is a negative pulse and a second section is a negative pulse.

Claim 9 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '100', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is at a negative pulse.

Claim 10 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '101', the encoded waveform comprising two sections where a first section is at a zero level and a second section is a positive pulse.

Claim 11 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '110', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is at a zero level.

Claim 12 (currently amended) The system according to claim 1, wherein the buffered three bits of the digital signal waveform comprise '111', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is a positive pulse.

Claim 16 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '000', the encoded waveform comprising two sections where a first section is at a zero level and a second section is at a zero level.

Claim 17 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '001', the encoded waveform comprising two sections where a first section is at a zero level and a second section is a negative pulse.

Claim 18 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '010', the encoded waveform comprising two sections where a first section is a negative pulse and a second section is at a zero level.

Claim 19 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '011', the encoded waveform comprising two sections where a first section is a negative pulse and a second section is a negative pulse.

Claim 20 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '100', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is a negative pulse.

Claim 21 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '101', the encoded waveform comprising two sections where a first section is at a zero level and a second section is a positive pulse.

Claim 22 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '110', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is at a zero level.

Claim 23 (currently amended) The method according to claim 13, wherein the buffered three bits of the digital signal waveform comprise '111', the encoded waveform comprising two sections where a first section is a positive pulse and a second section is a positive pulse.

Claim 24 (currently amended) A method for encoding comprising at least one of:

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encoding three bits comprising '000' of a digital signal waveform into an encoded waveform comprising two sections where a first section is at a zero level and a second section is at a zero level;

encoding three bits of a digital signal waveform comprising '001' into an encoded waveform comprising two sections where the first section is at a zero level and the second section is a negative pulse;

encoding three bits of a digital signal waveform comprising '010' into an encoded waveform comprising two sections where the first section is a negative pulse and the second section is at a zero level;

encoding three bits of a digital signal waveform comprising '011' into an encoded waveform comprising two sections where the first section is a negative pulse and the second section is a negative pulse;

encoding three bits of a digital signal waveform comprising '100' into an encoded waveform comprising two sections where the first section is a positive pulse and the second section is a negative pulse;

encoding three bits of a digital signal waveform comprising '101' into an encoded waveform comprising two sections where the first section is at a zero level and the second section is a positive pulse;

encoding three bits of a digital signal waveform comprising '110' into an encoded waveform comprising two sections where the first section is a positive pulse and the second section is at a zero level; and

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encoding three bits of a digital signal waveform comprising '111' into an encoded waveform comprising two sections where the first section is a positive pulse and the second section is a positive pulse, and

wherein the encoding increases the data transfer rate of the digital signal waveform.

Claim 26 (currently amended) A method for decoding comprising at least one of:

decoding an encoded waveform comprising two sections where a first section is at a zero level and a second section is at a zero level into three bits of a digital signal waveform comprising '000';

decoding an encoded waveform comprising two sections where the first section is at a zero level and the second section is a negative pulse into three bits of a digital signal waveform comprising '001';

decoding an encoded waveform comprising two sections where the first section is a negative pulse and the second section is at a zero level into three bits of a digital signal waveform comprising '010';

decoding an encoded waveform comprising two sections where the first section is a negative pulse and the second section is a negative pulse into three bits of a digital signal waveform comprising '011';

decoding an encoded waveform comprising two sections where the first section is a positive pulse and the second section is a negative pulse into three bits of a digital signal waveform comprising '100';

decoding an encoded waveform comprising two sections where the first section is at a zero level and the second section is a positive pulse into three bits of a digital signal waveform comprising '101';

decoding an encoded waveform comprising two sections where the first section is a positive pulse and the second section is at a zero level into three bits of a digital signal waveform comprising '110', and

decoding an encoded waveform comprising two sections where the first section is a positive pulse and the second section is a positive pulse into three bits of a digital signal waveform comprising '111'.

EXAMINER'S STATEMENTS OF REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance: Claims 1-27 are allowable over prior art because related references do not disclose buffering every three bits of a digital signal waveform, encoding and decoding the buffered three bits of the digital signal waveform, wherein the encoded waveform contains three bits of information for each single bit time of the digital signal waveform, wherein the encoding increases the data transfer rate of the waveform. Related references also do not disclose encoding three bits of a digital waveform into an encoded waveform which comprises of only two sections.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
December 9, 2004



**STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**